

-15-

CLAIMS

1. A method for operating a sequential color display system including a color
5 changer and an imager, which operate in combination to sequentially illuminate at least one
pixel with each of a set primary colors, comprising the steps of:
applying a control signal to the imager to cause the imager to illuminate the at least
one pixel for each primary color at a brightness level in accordance with the control signal;
using light occurring during at least one first spoke, corresponding to a first interval
10 when the color changer transitions from one color to another, when the at least pixel has a
brightness level above a first prescribed threshold for at least one color; and
altering the control signal when the light is used during such spoke to decrease
brightness of at the least one color in substantial time proximity to the occurrence of the spoke
to compensate for the brightness increase caused by using the light during such spoke.
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2. The method according to claim 1 wherein the step of altering the control signal
comprises the step of altering the control signal to decrease the brightness immediately before
and after such spoke.
- 20 3. The method according to claim 2 wherein the first brightness threshold differs
for each color.
4. The method according to claim 1 further comprising the step of using light
occurring during at least one additional spoke, in addition to the light used during the at least
25 one first spoke, when said at least one color has a brightness level above a second threshold.
5. The method according to claim 4 wherein the second brightness threshold
differs for each color.
- 30 6. The method according to claim 1 wherein the step of applying the control
signal includes applying a plurality of sequences of pulse width segments, each pulse width
segment causing the imager to illuminate an associated pixel for each primary color at a

-16-

brightness level in accordance with a total actuation of pulses within the pulse segment for such associated pixel.

7. A method for operating a sequential pulse width modulated display system having a color changer and an imager that operate in combination to sequentially illuminate at least one pixel for each of a set of primary colors, comprising the steps of:

applying a plurality of sequences of pulse width segments to the imager, each pulse width segment causing the imager to illuminate the at least one pixel for each primary color at a brightness level in accordance with the actuation state of pulses within the pulse segment for said at least one pixel;

using light occurring during at least one first spoke, corresponding to a first interval when the color changer transitions from one color to another, when said at least one pixel has a brightness for at least one color above a prescribed threshold; and

altering at least one sequence of pulse width segments when the light is used during the at least one first spoke to decrease brightness of at the least one color in substantial time proximity to the occurrence of the at least one first spoke to compensate for the brightness increase caused from using the light during the at least one first spoke.

8. The method according to claim 7 wherein the first brightness threshold differs for each color.

9. The method according to claim 7 further comprising the step of using the light occurring during at least one additional spoke, in addition to the light used during said at least one first spoke, when said at least one color has a brightness level above a second threshold.

10. The method according to claim 7 wherein the second brightness threshold differs for each color.

11. A method for operating a sequential pulse width modulated display system having a color changer which causes each of a set of primary colors to sequentially illuminate an imager which lights up each of a plurality of pixels for each primary color, comprising the steps of:

-17-

applying a plurality of sequences of pulse width segments to the imager, each pulse width segment causing the imager to illuminate each pixel for each primary color at a brightness level in accordance with the actuation state of pulses for each pixel within the pulse segment;

5 choosing at least one first spoke, corresponding to a first interval when the color changer transitions from one primary color to another primary color;

 altering at least one sequence of pulse width segments above a prescribed pixel brightness level for at least one color to selectively increase pixel brightness by using light during the at least one first spoke and to decrease pixel brightness during the pulse width
10 segments occurring substantially immediately before and after the at least one first spoke in order to compensate for the brightness increase from the spoke light.

12. The method according to claim 11 wherein the first brightness threshold differs for each color.

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13. The method according to claim 11 further comprising the step of using the light occurring during at least one second spoke in addition to the light used during at least one first spoke when each color has a brightness level above a second threshold.

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14. The method according to claim 13 wherein the second brightness threshold differs for each color.

15. A sequential color display system, comprising:
a light source;

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an imager for directing light from the light source to selectively illuminate each of a plurality of pixels on a display screen;

a color changer for sequentially changing the color of the light illuminating each of the plurality of pixels, and

a controller for (a) applying a control signal to the imager to cause the imager to
30 illuminate an associated pixel for each primary color at a brightness level in accordance with the control signal; (b) using light occurring during at least one first interval (spoke) in which the color changer transitions from one color to another when at least one color has a brightness level above a first prescribed threshold; and (c) altering the control signal when the

-18-

light is used during the at least one first spoke to decrease the brightness of at least one primary color in substantial time proximity to the occurrence of the at least one first spoke to compensate for the brightness increase caused from using the light during said at least one first spoke.

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16. The apparatus according to claim 15 wherein the controller alters the control signal to decrease the brightness immediately before and after said at least one first spoke.

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17. The apparatus according to claim 15 wherein the first brightness threshold is different for each color.

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18. The apparatus according to claim 15 wherein the controller makes use of the light occurring during at least one second spoke, in addition to the light used during at least one first spoke, when each color has a brightness level above a second threshold.

19. The apparatus according to claim 18 wherein the second brightness threshold is different for each color.

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20. The apparatus according to claim 15 wherein the controller applies a plurality of sequences of pulse width segments, each pulse width segment causing the imager to illuminate an associated pixel for each primary color at a brightness level in accordance with the actuation state of pulses within the pulse segment for such associated pixel.